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Examination Report

CLAIMS

1. Method for the treatment of effluents in which  
a flow of the said effluents is subjected to a pulsed  
electric field that has the effect of modifying  
physicochemical and biologic characteristics, this  
5 modification being used during a solid / liquid  
separation operation, the solid / liquid separation and  
the application of a pulsed electric field being  
operations carried out at different locations in the  
effluent flow, characterised in that the pulsed  
10 electric field is used according to a discharge mode,  
in other words a single acting mode, the discharge mode  
being obtained by pulse discharge of a capacitor  
powered by a dc power supply, and having adjustable  
voltage value, current value, pulse repetition  
15 frequency and voltage front shape characteristics.

2. Method according to claim 1, characterised in  
that the pulsed electric field is used according to a  
charge or discharge mode, in other words a double  
20 acting mode, charge mode being obtained by pulse charge  
of a capacitor powered by a dc power supply.

3. Method according to claim 1, characterised in  
that the solid / liquid separation operation is a  
25 membrane filtration operation.

4. Method according to claim 3, characterised in  
that the filtration method is chosen among tangential

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filtration, frontal filtration and semi-frontal type filtration.

5        5. Method according to claim 1, characterised in that the solid / liquid separation operation is a settlement operation.

10       6. Method according to claim 1, characterised in that the pulsed electric field has characteristics adjusted so that the said modification of physicochemical and biological characteristics enables hydrolysis of dissolved substances, aggregation of colloids, complete or partial destruction of microorganisms and simultaneous activation of remaining  
15       microorganisms.

20       7. Application of the method according to claim 1 to the treatment of treatment plant effluents and sludge, either in an activated sludge reactor, or in a rotofermenter.

25       8. Installation for the treatment of effluents, comprising means for a flow of the said effluents to be subjected to a solid / liquid separation operation, and means for a flow of the said effluents to be subjected to a pulsed electric field that has the effect of modifying physicochemical and biologic characteristics, this modification being used during a solid / liquid separation, the solid / liquid separation means (13,  
30       14, 15, 23, 33) and means for applying the pulsed electric field (12, 24, 25, 34) being located at

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different locations along the effluent flow, characterised in that means for applying a pulsed electric field are means operating according to a discharge mode, in other words a single acting mode, the discharge mode being obtained by pulse discharge of a capacitor powered by a dc power supply, and having adjustable voltage value, current value, pulse repetition frequency and voltage front shape characteristics.

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9. Installation according to claim 8, characterised in that means for applying a pulsed electric field (12, 24, 25, 34) are means operating according to a charge and discharge mode,--in other words a double acting mode, the charge mode being obtained by pulse charge of a capacitor powered by a dc power supply.

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10. Installation according to claim 8, characterised in that means for subjecting the said effluent flow to a solid / liquid separation operation are membrane filtration means.

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11. Installation according to claim 10, characterised in that the filtration means (13, 14, 15, 23, 33) are chosen from among tangential filtration; frontal filtration and semi-frontal type filtration means.

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12. Installation according to claim 8, characterised in that means to apply the solid / liquid

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separation to the said effluent flow are settlement means.

13. Installation according to claim 8,  
5 characterised in that the pulsed electric field has characteristics adjusted so that the said modification of physicochemical and biological characteristics enables hydrolysis of dissolved substances, aggregation of colloids, complete or partial destruction of  
10 microorganisms and simultaneous activation of remaining microorganisms.